[Billing Code 6450-10-P]

U.S. DEPARTMENT OF ENERGY

Issuance of Loan Guarantees to various applicants for the Vogtle Electric Generating Plant - Units 3 and 4 in Burke County, Georgia.

AGENCY: U.S. Department of Energy.

ACTION: Record of Decision (ROD).

SUMMARY: The U.S. Department of Energy (DOE) announces its decision to issue loan guarantees under Title XVII of the Energy Policy Act of 2005 (EPAct 2005) totaling approximately $8.3 billion to one or more of the following applicants for the construction and start-up of the proposed Vogtle Electric Generating Plant (VEGP) Units 3 and 4 advanced nuclear reactors for the production of electrical power in Burke County, Georgia: Georgia Power Company; Oglethorpe Power Corporation; and Municipal Electric Authority of Georgia and its subsidiaries. The VEGP Units 3 and 4 would be located in a rural area in eastern Burke County, Georgia, which is the site of two operating nuclear reactor units (VEGP Units 1 and 2). A new 55-mile, 500 kilovolt (kV) transmission line would be constructed to bring power from the switchyard for the new units to the Thomson substation 20 miles west of Augusta, Georgia. The potential environmental impacts of constructing and operating the proposed project, including the transmission line, were analyzed pursuant to the National Environmental Policy Act (NEPA) in the *Final Environmental Impact Statement for an Early Site Permit (ESP) at the Vogtle Electric Generating Plant Site* (FEIS) and Supplemental EIS (SEIS) for the Combined Licenses

(COLs) prepared by the Nuclear Regulatory Commission (NRC). DOE determined that the project analyzed in the FEIS and SEIS (the NRC EISs) was substantially the same as the project that would be covered by the DOE loan guarantees. DOE was not a cooperating agency with NRC on the EISs and subsequently adopted and re-circulated them as a DOE final EIS (DOE/EIS-0476). The formal announcement of adoption and recirculation was published by the U.S. Environmental Protection Agency (EPA) on February 17, 2012 (77 FR 9652).

ADDRESSES: Copies of this ROD and DOE/EIS-0476 may be obtained by contacting Sharon R. Thomas, NEPA Document Manager, Environmental Compliance Division, Loan Programs Office (LP-10), U.S. Department of Energy, 1000 Independence Avenue, SW, Washington, DC, 20585; telephone 202-586-5335; or e-mail Sharon.R.Thomas@hq.doe.gov. The DOE Final EIS and this ROD are also available on the Loan Programs website at: http://www.loanprograms.energy.gov. These documents as well as other general information concerning the DOE NEPA process can be found on the DOE NEPA website at: http://www.energy.gov/nepa.

SUPPLEMENTARY INFORMATION:

Background

Georgia Power Corporation (GPC), Oglethorpe Power Corporation (OPC), and the Municipal Electric Authority of Georgia (MEAG) and its subsidiaries have submitted separate applications for loan guarantees totaling approximately $8.3 billion in response to a solicitation issued by DOE in 2008 under its authority established by Title XVII of EPAct 2005. An organization consisting of Southern Nuclear Operating Company (SNC), Southern Company Services (SCS),

and GPC personnel was established to oversee and staff the proposed VEGP Units 3 and 4 (the Project). The new reactor units, currently under construction, are licensed to and would be operated by SNC. GPC would construct a transmission line to bring power from the switchyard for the new units to the Thomson substation 20 miles west of Augusta, Georgia. The transmission line right-of-way would be approximately 150 feet wide, 55 miles long, and have approximately 225 transmission towers.

In August 2006, SNC submitted an application to NRC for an ESP for the proposed VEGP Units 3 and 4. The NRC prepared an EIS pursuant to NEPA § 102(2)(C), and issued an FEIS in August 2008 (NUREG-1872). On August 26, 2009, NRC issued the ESP. In March 2008, SNC submitted an application to the NRC for COLs, and in March 2011, NRC issued a final SEIS for the COLs (NUREG-1947)[1]. On February 9, 2012, NRC issued a Memorandum and Order (CLI-12-02) authorizing the issuance of COLs for Units 3 and 4. The NRC Memorandum and Order constitutes the ROD for the NRC EISs. The NRC Office of New Reactors issued COLs NPF-91 for Unit 3 and NPF-92 for Unit 4 on February 10, 2012.

In September 2008, the applicants submitted a Part I Application to the DOE Loan Programs Office (LPO) for a loan guarantee in response to the DOE Loan Guarantee Solicitation Announcement titled "Federal Loan Guarantee for Nuclear Power Facilities" (Reference

[1] By issuing an ESP, NRC approves one or more sites for a nuclear power facility, independent of the specific nuclear plant design. In reviewing an ESP application, the NRC evaluates site safety issues, environmental protection issues, and plans for coping with emergencies. By issuing a COL, NRC authorizes the licensee to construct and operate (under specified conditions) an approved design for a nuclear power plant at a specific site.

Number: DE-FOA-0000006). In December 2008, the applicants submitted Part II of their application.

NEPA Review

DOE reviewed the NRC EISs and determined that the project analyzed in the EISs was substantially the same as the project that would be covered by the DOE loan guarantees. DOE did not participate as a cooperating agency in the preparation of the NRC EISs; therefore, in accordance with DOE's NEPA regulations (10 Code of Federal Regulations [CFR] Part 1021), DOE conducted an independent review of the NRC EISs and related documents for the purpose of determining whether DOE could adopt them pursuant to Council on Environmental Quality regulations at 40 CFR §1506.3. DOE adopted and re-circulated the NRC EISs as a single, final DOE EIS (DOE/EIS-0476). See EPA's Notice of Adoption at 77 FR 9652 (2/17/12).

In addition to its adoption of the NRC EISs, DOE considered various sources of information to satisfy its obligations under NEPA, including the following: the Safety Analysis Report prepared by SNC (see NRC Agency Document Access and Management System (ADAMS) Accession Number ML11180A100); the Standard Design Certification for the AP1000 nuclear reactor design developed by the design contractor, Westinghouse Electric Corporation (see ADAMS ML11171A500); the Safety Evaluation Report, prepared by NRC (see ADAMS ML110450302); the Independent Engineer Reports prepared by DOE's independent engineering firm (MPR Associates Inc.; Report MPR-3367 Rev.4, April 2013, and supplement dated October 9, 2013); and the U.S Army Corps of Engineers (USACE) authorization under Nationwide

Permit No. 12 (project number SAS-2012-01016) and application for Nationwide Permit 12, Pre-Construction Notification, Thomson-Vogtle 500kV Transmission Line.

As part of its NEPA review, DOE considered the potential impacts of the transmission line in consultation with the USACE during the Clean Water Act Section 404 permitting process. DOE was party to consultation between the Georgia State Historic Preservation Office and the USACE, conducted in compliance with Section 106 of the National Historic Preservation Act, and consulted with the USACE regarding its review of impacts to federally-listed threatened and endangered species in compliance with Section 7 of the Endangered Species Act. USACE completed the Section 106 process, determined that there would be no effect on federally-listed species, and authorized the proposed activity under Nationwide Permit No. 12 on September 26, 2013.

Alternatives Considered

The Proposed Action in the NRC EISs was for NRC to issue licenses that would authorize the applicants to construct, operate, and decommission the proposed project. Several alternatives were considered by the NRC, including: (1) the No Action Alternative, under which the proposed project would not be constructed, operated, and decommissioned at the VEGP site; (2) energy source alternatives; and (3) system design alternatives. These alternatives were eliminated from further consideration because they did not offer any environmental advantage over the proposed action, did not provide a sufficient amount of power generation to meet expected demand, or did not meet the need for a reliable and economical source of power generation.

The DOE decision is whether or not to issue loan guarantees to one or more of the applicants named above to support construction and startup of the Project as identified in DOE/EIS-0476 and authorized under the NRC COLs NPF-91 and NPF-92 for the VEGP Units 3 and 4, respectively. Accordingly, the DOE alternatives are (1) the Proposed Action, to issue loan guarantees to the applicants for the Project, and (2) the No Action Alternative, i.e., no loan guarantees.

Environmentally Preferable Alternative

DOE has decided that its Proposed Action, to issue loan guarantees for construction and startup of the Project, is environmentally preferable. This alternative offers environmental benefits consistent with the statutory objectives of Title XVII of EPAct 2005, which include reductions in greenhouse gas emissions. Compared to coal-fired and natural-gas-fired sources producing the same amount of base-load power, annual carbon dioxide (CO_2) emission rates from nuclear power plants (including the fuel cycle processes) are considerably less (Table 7-1 of the NRC SEIS). In addition, DOE has determined that all practicable means to avoid or minimize environmental harm, as described in Sections 4.10 (Measures and Controls to Limit Adverse Impacts During Site-Preparation Activities and Construction) and 5.11 (Measures and Controls to Limit Adverse Impacts During Operation) of DOE/EIS-0476, have been incorporated into the NRC COLs NPF-91 and NPF-92 for the VEGP Units 3 and 4 and will be required as conditions of the DOE loan agreements for the Project.

Response to Comments on the Adopted NRC EISs

DOE received two letters concerning its adoption of the NRC EISs as DOE/EIS-0476. The comment letters included a letter from the U.S. Environmental Protection Agency (EPA) Region 4 and a letter from the Blue Ridge Environmental Defense League (BREDL).

EPA Comments

EPA expressed a concern regarding storage, transportation and disposal of radioactive wastes, and spent fuel, which at this time does not have an approved site for disposal. Efforts by DOE and NRC to address the issue of how to manage spent fuel are ongoing and are summarized below.

DOE - On January 29, 2010, the President directed the Secretary of Energy to establish a Blue Ribbon Commission (BRC) to consider a broad range of technological and policy alternatives regarding spent fuel disposition, and to analyze the scientific, environmental, budgetary, economic, financial, and management issues surrounding each alternative. The BRC included experts from research facilities, academic and policy-centered institutions, industry, and labor and environmental organizations. They were tasked to conduct a comprehensive review of policies for managing the back end of the nuclear fuel cycle, including alternatives for the storage, processing, and disposal of civilian and defense used nuclear fuel, high-level waste, and materials derived from nuclear activities. The BRC submitted its final report and recommendations for future actions to the Secretary of Energy on January 26, 2012. In January 2013, DOE published a *Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste* (available on DOE's website at

http://energy.gov/downloads/strategy-management-and-disposal-used-nuclear-fuel-and-high-level-radioactive-waste). This strategy includes a phased adaptive and consent-based approach to siting and implementing a comprehensive management and disposal system, and outlines DOE's plans for the eventual transportation, storage, and disposal of used nuclear fuel using both existing and new authorizations by Congress. DOE has a contractual obligation to remove and disposition spent fuel from the Project, and DOE remains committed to meeting this obligation in a manner protective of human health and the environment.

NRC - The Waste Confidence Decision and Rule (WCR) represents the generic determination by NRC that spent nuclear fuel can be stored safely and without significant environmental impacts for a period of time after the end of the licensed life of a nuclear power plant. This generic analysis was incorporated into NRC's NEPA review for the Project. In 2010, NRC issued an updated WCR (10 CFR § 51.23(a)). On June 8, 2012, the U.S. Court of Appeals for the D.C. Circuit ruled that NRC had violated NEPA in issuing the 2010 WCR update. *New York v. NRC*, 681 F.3d 471 (D.C. Cir. 2012). In response to the court's ruling, on August 7, 2012, NRC voted to delay final approval of any pending licenses for new nuclear plants until it can address environmental concerns regarding long-term waste storage. However, this delay does not affect the VEGP project because the COLs were issued by NRC prior to NRC's August 2012 decision. On September 6, 2012, NRC directed its staff to prepare a generic EIS and a revised WCR to address the deficiencies identified in the court's opinion. NRC also created a Waste Confidence Directorate within the Office of Nuclear Material Safety and Safeguards to oversee the preparation of a new Waste Confidence EIS and Rule. NRC has instructed the Directorate to issue the final EIS and WCR by September 2014. On September 13, 2013, NRC published FR

notices announcing the availability of the proposed WCR (78 FR 56776) and supporting draft Generic EIS for public comment (78 FR 56621).

NRC has the regulatory authority to determine if spent fuel can be stored safely at its licensed facilities. DOE will continue to monitor the NRC WCR environmental review and rulemaking, and DOE's loan guarantee agreements will require that the Project comply with any new regulatory or license conditions.

In addition to the safety and environmental review performed by NRC in the licensing process, DOE considered other sources of information regarding the safety and security of spent fuel at the proposed Project and the potential environmental effects of long-term spent nuclear fuel storage in the on-site storage facilities. NRC's review included a safety evaluation of the VEGP Units 3 and 4 and the AP1000 reactor design to assess risks, including those from spent fuel pool fires or leaks. DOE also reviewed reports developed by the independent engineering firm, MPR Associates Inc., completed as part of the due diligence process for the loan guarantees for the Project. The independent engineering firm confirmed that there were reasonable plans to safely store spent fuel and stated that possible post-Fukushima actions (e.g., modification of spent fuel pool water level indication) should be straightforward to integrate into the AP1000 if NRC should require changes. Each of the two proposed AP1000 units has the pool capacity to store 17 years of spent fuel. The independent engineering firm also examined the potential of the dry fuel storage facility for VEGP Units 1 and 2 to be used for spent fuel casks from proposed VEGP Units 3 and 4. A general license for operating an Independent Spent Fuel Storage Installation (ISFSI) has been authorized by NRC and is being built for VEGP Units 1 and 2. The ISFSI will

accommodate storage of the reactor fuel from Vogtle Units 1 and 2 for the first 60 years of operation (i.e., 120 reactor years for two units) with expansion capacity for an additional 40 years. If required, this capacity could be available to meet at least part of VEGP Units 3 and 4 dry fuel cask storage needs, although there are no plans to do so at this time and this use would potentially require a license amendment. Additional dry storage capacity for the VEGP Units 3 and 4 would be developed in the long term, if needed.

DOE also reviewed information regarding potential impacts of long-term spent fuel storage found in the No Action Alternative of the *Final Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada* (DOE/EIS-0250, February 2002) (Yucca Mountain FEIS), and the *Final Supplemental Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada* (DOE/EIS-0250F-S1, June 2008) (Yucca Mountain SEIS). In the Yucca Mountain FEIS and SEIS, DOE assessed the potential environmental effects of not constructing and operating a permanent disposal repository at Yucca Mountain (the No Action Alternative) by selecting two scenarios for analysis. Under Scenario 1, which assumes the existence of effective institutional controls, the estimated radiological health impacts are almost exclusively limited to workers. Under Scenario 2, which assumes a lack of institutional controls after 100 years, the spent nuclear fuel and high-level radioactive waste storage facilities would begin to deteriorate and eventually release radioactive materials to the environment, resulting in adverse impacts to human health. Over time, the unchecked deterioration and dissolution of the materials in the environment would continue and impacts would increase. The potential impacts associated with

long-term spent fuel storage described as part of the No Action Alternative presented in the Yucca Mountain FEIS and SEIS were considered along with the information provided in the NRC review regarding the potential environmental and human health effects of long-term storage of spent fuel.

BREDL Comments

BREDL provided comments pertinent to the NEPA environmental review that DOE addresses below. BREDL also submitted comments questioning the eligibility of the Project design as an innovative technology, DOE's ability to secure the debt obligation, and the integrity of DOE's due diligence process, none of which has any bearing on the NEPA environmental review process. In reviewing completed loan guarantee applications and in selecting those to whom a guarantee will be offered, DOE applies the criteria set forth in Title XVII of EPAct 2005, the implementing regulations in 10 CFR Part 609, and the applicable solicitation issued by DOE. DOE's due diligence process for evaluating potential loan guarantees includes a rigorous analysis of the proposed project including, but not limited to, its legal, financial, technical, environmental, regulatory, credit and market aspects. Subject to continuing due diligence, DOE establishes a project's eligibility and the reasonable prospect of loan repayment early in this process, before DOE conditionally commits to pursuing the documentation and underwriting of a loan guarantee. As such, DOE's due diligence and internal approval process for the Project has included an evaluation that fully addressed BREDL's concerns. BREDL's summarized comments (C) relevant to DOE/EIS-0476 and DOE's responses (R) are included below:

1. C: DOE must consider the Environmental Justice requirements of Executive Order 12898 in its decision making.

R: Low income and minority populations exist within the census tracts in a 50-mile radius of the Project site. In reviewing the NRC EISs, DOE considered the environmental impacts of the action and whether these populations would suffer disproportionately high and adverse environmental impacts. The NRC EISs analyzed the potential effects of the plant during construction and operation and the mitigations to be enacted by the Project operators. NRC determined and DOE concurs that the potential adverse effects would be generally small and would not disproportionately affect the census tracts with higher low-income and minority populations.

2. C: The design chosen for the new units fails to avoid, reduce or sequester air pollutants and anthropogenic emissions of greenhouse gases, and the uranium fuel cycle uses fossil fuels that contribute to global warming.

R: The NRC SEIS included a comparison of emissions from a nuclear power plant (including the fuel cycle processes) to those from similarly sized fossil fuel plants and demonstrated that the nuclear plant has approximately $1/10^{th}$ the annual CO_2 emission rate of a natural-gas-fired power plant and $1/20^{th}$ the emissions of a coal-fired power plant (See Table 7-1, Comparison of Annual CO_2 Emission Rates).

3. C: The Vogtle Electric Generating Plant will not meet Clean Air Act standards. Without maximum achievable control technology, routine emissions from the plant would be excessive especially when considered in addition to the existing site-wide radioactive emission levels.

R: The Project is required to meet Clean Air Act standards and obtain a permit for operations that generate non-radioactive pollutants, such as emergency generators. EPA has determined

that the radionuclide emissions of the plant are best regulated by the authority given to NRC. On September 5, 1995 (60 FR 46206), EPA amended the Clean Air Act's National Emission Standard for Hazardous Air Pollutants (NESHAPS) for radionuclide emissions to exempt nuclear power reactors which are licensed by the NRC. On December 30, 1996 (61 FR 68972), EPA amended the 40 CFR 61 Subpart I Radionuclide NESHAP so that it no longer applies to operations licensed by the NRC or NRC Agreement States. EPA has concluded that the NRC regulatory program controlling air emissions of radionuclides from nuclear power reactors will ensure that resultant doses will consistently and predictably be below the levels which EPA has determined are necessary to provide an ample margin of safety to protect public health.

4. C: Southern Nuclear does not properly account for the higher levels of morbidity and mortality in females and infants caused by low levels of radiation.

R: While children and fetuses are more sensitive to the effects of radiation, the radiation protection standards applicable at the site for members of the general public take into account the differences in sensitivity due to age and gender, including females and infants.

Decision

DOE has decided to select the Proposed Action to issue loan guarantees to one or more of the following applicants for the construction and start-up of the proposed VEGP Units 3 and 4 in Burke County, Georgia, as identified in DOE/EIS-0476 and authorized under the NRC COLs NPF-91 and NPF-92: Georgia Power Company; Oglethorpe Power Corporation; and Municipal Electric Authority of Georgia and its subsidiaries. Approval of loan guarantees for the Project responds to the DOE purpose and need pursuant to Title XVII, Section 1703 of EPAct 2005

(42 U.S.C. 16511–16514), which authorizes the Secretary of Energy to make loan guarantees for projects that (1) avoid, reduce, or sequester air pollutants or anthropogenic emissions of greenhouse gases, and (2) employ new or significantly improved technologies as compared to commercial technologies in service in the United States at the time the guarantee is issued. The Section 1703 DOE loan guarantee program aims to accelerate the commercialization of innovative, environmentally-friendly technologies that will support clean, affordable, and reliable supplies of energy. The purpose and need for DOE's loan guarantee action is to comply with DOE's mandate under Title XVII of EPAct 2005 by selecting projects that meet the goals of the Act.

Mitigation

The Project for which DOE has decided to issue loan guarantees includes all mitigation measures, terms, and conditions applied by the NRC in its COLs NPF-91 and NPF-92, as well as mitigation and avoidance measures imposed by the USACE in its Nationwide Permit No. 12 for the proposed transmission line. The mitigation measures, terms, and conditions represent practicable means by which to avoid or minimize environmental impacts from the selected alternative. NRC is responsible for ensuring compliance with all adopted mitigation measures, terms, and conditions for the Project set forth in the NRC COLs NPF-91 and NPF-92. Sections 4.10 (Measures and Controls to Limit Adverse Impacts During Site-Preparation Activities and Construction) and 5.11 (Measures and Controls to Limit Adverse Impacts During Operation) of the adopted NRC EISs (DOE/EIS-0476) contain the mitigation measures, terms, and conditions developed in accordance with NEPA.

DOE's loan guarantee agreements require the loan guarantee recipients to comply with all applicable laws, authorizations, and approvals, including the terms of the NRC COLs NPF-91 and NPF-92 and the USACE permit for the proposed transmission line, including mitigation measures contained therein. Any additional future requirements imposed by the NRC would also be required by the loan guarantee agreements for the Project. A recipient's failure to comply with applicable laws, authorizations, and approvals would constitute a default, upon which DOE would have the right under the loan guarantee agreement to exercise usual and customary remedies. To ensure a recipient complies with the requirements of the loan guarantee agreement, the Loan Programs Office proactively monitors all operative loan guarantee transactions.

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Peter W. Davidson
Executive Director
Loan Programs Office